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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,760	01/05/2004	Moshe Medina		1678

7590 12/21/2005
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EXAMINER

DUPUIS, DEREK L

ART UNIT PAPER NUMBER

2883

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/750,760

Applicant(s)

MEDINA ET AL.

Examiner

Derek L. Dupuis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 20-25, 28 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 26, 27 and 30-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/29/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species A, C, D, F, G, and H in the reply filed on 10/13/2005 is acknowledged. The traversal is on the ground(s) that "species A, C, D, F, G and H are not patentably distinct, the species being obvious variants". The examiner finds the applicant's argument persuasive.
2. Claims 20-25, 28, and 29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/13/2005.

The election of species requirement between Species (A, C, D, F, G and H), Species B, and Species E is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 3/29/2004 has been considered by the examiner.

Drawings

4. The drawings were received on 1/5/2004. These drawings are objected to because some figures are difficult to see. Specifically, it is difficult to distinguish the features of claim 1 because the figure is too dark.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4, 5, 7, 8, 18, and 30-32 are rejected under 35 U.S.C. 102(e) as being anticipated by *Hong et al (US 6,775,459 B2)*.
7. Regarding claim 1, Hong et al teach a MEMS variable optical attenuator comprising a semitransparent refraction-mode shutter (3) operative to attenuate an optical beam transmitted along an optical path from a first optical fiber (1) to a second optical fiber (2), using refraction of the beam. Hong et al also teach an actuator (4) operative to position the shutter in the optical path along a movement axis as can be seen in figures 5-7 (see abstract, and column 2, lines 49-58, column 3, lines 9-59, and column 4, lines 54-65).
8. Regarding claims 4, 5, 7, 8, and 18, Hong et al teach a MEMS VOA as discussed above in reference to claim 1. Hong et al also teach that the actuator is a comb drive (4) and that the actuator includes a frame with a plurality of curved springs as can be seen in figure 5. Figure 5 also shows that the shutter has a vertical component and therefore “stands vertical”.
9. Regarding claims 30-32, Hong et al teach a MEMS variable optical attenuator comprising a shutter (3) operative to attenuate an optical beam transmitted along an optical path from a first optical fiber (1) to a second optical fiber (2), using refraction of the beam. Hong et al also teach an actuator (4) operative to position the shutter in the optical path along a movement axis as can be seen in figures 5-7. The actuator also includes a plurality of curved springs and a comb drive (4). The shutter also has a serpentine shape as can be seen in figure 5 (see abstract, and column 2, lines 49-58, column 3, lines 9-59, and column 4, lines 54-65).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 16 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hong et al (US 6,775,459 B2)* as applied to claims 1, 4, 5, 7, 8, 18, and 30-32 above, and further in view of *Lim et al (US 6,549,107 B2)*.

12. Regarding claims 16 and 27, Hong et al teach a MEMS VOA as discussed in reference to claim 1. Hong et al teach that the MEMS VOA includes a semitransparent refraction-mode shutter (3) operative to attenuate an optical beam transmitted along an optical path from a first optical fiber (1) to a second optical fiber (2), using refraction of the beam. Hong et al also teach an actuator (4) operative to position the shutter in the optical path along a movement axis as can be seen in figures 5-7 (see abstract, and column 2, lines 49-58, column 3, lines 9-59, and column 4, lines 54-65). However, Hong et al do not explicitly disclose a locking mechanism for locking the shutter in an actuated position.

13. Li et al teach a latching mechanism for a MEMS actuator as shown in figures 1-5. The latching mechanism as shown in figure 5 includes latching “teeth” (66) with pins (64) that can be inserted between the teeth to lock the shutter (33) in an actuated state. Li also teaches that the latching teeth can be located at different parts of the “shutter arm” (14) as can be seen in figures 3A, 3B, and 5.

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14. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the MEMS VOA of Hong et al by using a locking mechanism as taught by Li et al.

Motivation to do this would be to enable the actuator to “retain its position in the event of a power interruption” and to develop a “fail-safe mode of operation” (see column 1, lines 9-32 of Li et al).

15. Claims 1-19, 26, 27, and 30-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hong et al (US 6,775,459 B2)* in view of *Lim et al (US 6,549,107 B2)* as applied to claims 1, 4, 5, 7, 8, 16, 18, 27, and 30-32 above, and in further view of applicant’s own admission of prior art.

16. Hong et al in view of Lim et al teach a variable optical attenuator as discussed above in reference to claim 27. As outlined in the Election of Species requirement, claim 27 was identified as Species D and claims 30-32 were identified as Species F. In applicant’s response to the election of species requirement, applicant stated that “species A, C, D, F, G, and H are **not patentably distinct, the species being obvious variants.**” As stated in the election of species requirement mailed on 7/13/05, “should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case”. “In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other inventions”. Since Hong et al in view of Lim et al teach the limitations of Species D and since Hong et al teach the limitations of Species F, the other species (A, C, G, and H) are thereby rendered obvious. Therefore, the claims drawn to species A (claims 1-19), species C (claim 26),

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species G (claims 33-38) and species H (claims 39 and 40) are thereby rendered obvious and are rejected under 35 U.S.C. 103(a). Furthermore, Species F (claims 30-32) is rendered obvious by Species D (claim 27) and vice versa.

Conclusion

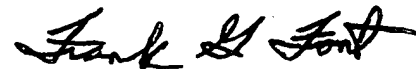
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L. Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Derek L. Dupuis
Group Art Unit 2883



Frank G. Font
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